“Development and Effectiveness of a new model for family health educational skills training in Family Adoption Program – An interventional study”

Synopsis

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ABSTRACT

Background: There is no structured model to train medical undergraduates in family health educational skills and competencies required in Family Adoption Program. Aim: To develop a new (ABCDE) model for family health educational skills training of medical undergraduates in Family Adoption Program (FAP) and assess its effectiveness.

Methods: A Randomized controlled trial was conducted among phase I MBBS students divided into study group and control group with 30 students each. The study group was trained with ABCDE model based module and control group with conventional teaching. Face validation and Content validation of the module was done. Assessment tools were developed and reliability assessed by kappa co-efficient. Perceptions of students, faculty and families were expressed as median and inter-quartile range. Satisfaction index was calculated. Thematic analysis was done for open ended questions.

Results: Module validation showed that face validity was 100% for items 2 & 7 while it was 90% for items 1, 3, 4 & 5, 80% for item 6. The Cumulative Content Validity Index (C-CVI) was 0.96, 0.94, 1 and 0.98 respectively for each criterion. The overall module content validity index (CVI) was 0.97. The Basic Skills Assessment Tool (κ = 0.783, p 0.007) and the attitudinal skills checklist (κ = 0.733, p 0.000) are RELIABLE. The satisfaction index was 88.67 for students and 92 for faculty, about acceptability and feasibility of the model. Perceptions of majority of the students, faculty and families were positive about the FAP skills training module based on ABCDE model.

Conclusion: ABCDE model is very effective for family health educational skills training in Family Adoption Program. It should be used routinely for training undergraduates in family health educational skills.

Key words: Structured model, health educational skills, family adoption program, medical undergraduates.

INTRODUCTION

Family Adoption Program (FAP) was introduced in the undergraduate medical curriculum to provide an experiential learning opportunity to Indian Medical Graduates about community-based health care and thereby promote equity in health.[1,2] FAP is recommended as a part of curriculum of Community Medicine, beginning from 1st professional year and continuing throughout the curriculum.[1,2] The students adopt families in the villages and visit the adopted families several times at intervals over the MBBS course to maintain continuous relationship with the families. They impart health education to the families, about various elements such as healthy behaviors, lifestyle modification, diet, health seeking and so on

"Health Education comprises consciously constructed opportunities for learning, involving some form of communication designed to improve health literacy and developing life skills which are conducive to individual and community health".[3] Nowadays, medical education mostly focuses on the diagnosis and treatment of disease, rather than disease prevention and health promotion.[4] Active student participation is a key component of this.

Health Education activities can play a major role in assisting medical students to – understand key factors and strategies for prevention, promote individual and societal health, and understand the impact of social determinants of health (e.g. culture, religion, etc.) on health behaviour and health.[4] Such competencies are deemed necessary by both regulating bodies and medical students themselves.[5,6]

NEED/RATIONALE OF THE STUDY:

Although FAP is introduced ambitiously, there is no structured model to train medical undergraduates in family health educational skills and competencies required in FAP, no assessment tools to assess the students in these skills, perceptions of faculty and students about such training model may help in improving the training of the students in these skills. Hence, there is a need to develop a structured model to teach family health educational skills and competencies required in FAP.

AIM AND OBJECTIVES

Aim: To develop a new (ABCDE) model for family health educational skills training of medical undergraduates in Family Adoption Program (FAP) and assess its effectiveness

Objectives:

1. To develop a new model for training of medical undergraduates in family health educational skills.
2. To develop a structured validated module of teaching based on the new model of training.
3. To develop an assessment tool based on new model.
4. To assess the effectiveness of the new model in comparison to conventional method for training students in family health educational skills in FAP
5. To assess the acceptability and feasibility of the model among medical students.
6. To obtain faculty, students' and families' perceptions about the model

HYPOTHESIS/RESEARCH QUESTIONS

1. **Objective 1:** What are the elements of a new model for training of medical undergraduates in family health educational skills in family adoption program?
2. **Objective 2:** What is the validity of a structured module based on the new model of training?
3. **Objective 3:**

a. What are the elements of a newly developed assessment tool based on new model?

b. What is the reliability of a newly developed assessment tool based on new model?

4. **Objective 4:** H_{01} = A structured validated module of teaching based on the new model may not be effective in comparison to conventional method for training students in family health educational skills in family adoption program

   H_1 = A structured validated module of teaching based on the new model is effective in comparison to conventional method for training students in family health educational skills in family adoption program

5. **Objective 5:** H_{02} = The new model of teaching may not be acceptable and feasible among medical students

   H_2 = The new model of teaching is acceptable and feasible among medical students

6. **Objective 6:** H_{03} = The faculty, students' and families' perceptions about the model may not be positive

   H_3 = The faculty, students' and families' perceptions about the model is positive

REVIEW OF LITERATURE

This program was first established as a component of CBME at MGIMS, Sewagram as Village Adoption Program.[7]

Some of the programs similar to FAP have been introduced in several parts of the country.

- Sewagram curriculum: In step I, a 15-day camp is conducted at Gandhi ashram to educate new students on the values based on Gandhian doctrine.[7] In Step II, a social service camp is conducted,[8] in which students spend 15 days in the adopted community, make daily visits to their allotted families to complete sociodemographic, dietary, and health assessments. In the social service camp, the responsibilities of community health workers, community health committees, schoolteachers, and other stakeholders are examined. Every student gets three or four families. Learn about the social and cultural factors that influence health, the students visit their adopted village once a month on a Saturday for the following 3½ years following the Social Service Camp and the villagers are given free access to laboratory tests, consultations, and referrals.
- AIIMS: Family Health Advisory Program (FHAP): Students of phase three MBBS are allotted families for conducting family survey. Simultaneously, outpatient department (OPD) is run by the junior and senior residents to give appropriate consultation to the members referred by students during the survey and to other residents of the village who attend OPD for their health needs
- Jawahar Lal Institute of Medical Sciences (JLIMS), AMU, Aligarh:[9] Punjipu village was adopted. Each medical student adopted three to five families to monitor their health conditions regularly and advise them accordingly.
- KMC, Mangalore, Karnataka:[10,11] Villages in and around Kateel were selected and each student was allotted two families.

- The objective of Village Adoption Program (VAP) is to develop the selected village in an integrated manner and include economic development, infrastructure development and other aspects of human development i.e., education, health, drinking water supply, etc., besides access to credit.[12] The aim of FAP is to ensure enhanced healthcare services in rural areas. The

outcomes achieved by the village and students all will be documented in a database. Workers from ASHA may also be included in the program to help the students and doctors.[13]

Studies related to the topic:

- **Shree A, Rashmi S, Sunil Kumar D.[14] (2024)** in Karnataka, assessed the perceptions of 270 Indian Medical Graduates on the Family Adoption Program. They identified that the reasons for non-cooperation by families were "Language barrier and communication barrier," "No trust, invasion of privacy" and "No trust in the health system". The Obstacles encountered for the incomplete data collection were "Does not know how to communicate with the family", "Does not know the local language", "Families do not trust us", "lack of interest shown by the family", "less preparedness", "insufficient time given to collect the information". Reasons cited for the requirement of exposure to the community through FAP in the First Year were, to understand the situation and people's perspective about health and built compassion to understand the necessity of the community, to become more society oriented, to develop skills like communication.

- **Vairavasolai P, Mariavinifa X, Karthikeyan S, Felicia JP.[15] (2023)** in Tamil Nadu, assessed the impact of the family adoption program from the perspective of the students among 150 MBBS students. The positive learnings of the students included communication skills, better understanding of the rural dynamics, identification of health status of the families and also learning about different health programs. Majority of the students also felt that this program would help MBBS students become complete physicians with empathy and confidence in the future. The common barriers encountered were communication barriers and difficulty in gaining the trust of few family members.

- **Yalamanchili VK, Uthakalla VK, Naidana SP, Kalapala A, Venkata PK, Yendapu R.[16] (2023)** in Andhra Pradesh, conducted a study to understand the perceptions of various stakeholders regarding FAP and identify various challenges and opportunities. The study involved 22 faculty members, three MSWs, 19 undergraduates, five postgraduates. The participants felt that FAP

will provide a good insight into the patient's living conditions and motivate the students for their career. The major challenges were the lack of transport and logistics in government colleges and the faculty shortage in private colleges, gaining the trust and cooperation of the family and reducing the expectations. There was a difference of opinion regarding the right time to initiate the student into FAP. More involvement by faculty was advocated, increased workload and reduced faculty requirement were a matter of concern.

- **Arumugam B, Sanjana L, Singh DG, et al.[17] (2022)** in Tamil Nadu reviewed the experience of "Family Adoption Program" among 150 undergraduate medical students. The students felt that FAP provided an opportunity to the students to interact and develop their communication skills with the general population which will help them in their future practice. The sensitization as well as the first field visit as per the program conducted by the department worked out well with active participation by the students.

- **Narapureddy BR, Patan SK, Deepthi CS, Chaudhuri S, John KR, Chittooru C.[18] (2022)** in Andhra Pradesh, conducted a study to introduce a Community Orientation Program (COP) as a Community-based Medical Education (CBME) method and to sensitize undergraduate medical students to the social and contextual determinants of health. Between 2016 and 2019, 557 students were trained through the COP by visiting more than 1300 households in ten villages. More than 150 small group discussions, a health education program for the community and summary presentations were conducted. More than 80% of students felt that the program assisted them to improve their communication skills, their understanding of the various socio-demographic factors associated with the common diseases, and to respect the local culture.

- **Claramita M, Setiawati EP, Kristina TN, Emilia O, van der Vleuten C.[19] (2022)** in Indonesia, aimed to develop a CBE framework for undergraduate medical education (from macro, meso, and micro curriculum levels) to engage students and teachers with better, more meaningful learning, within primary health care settings. Participants were eight medical educationalists and ten CBE teachers. They identified a new framework for a community-based educational program. It should offer opportunities for small group activities,

ranging from simple to complex learning, emphasizing clinical skills, leadership, and teamwork to improve self-directed and collaborative practice. Facilitating factors were sufficient role models and constructive feedback within primary care contexts. They concluded that, by using the CBE framework, students and teachers may better comprehend the essentials of primary health care.

- **Diab P, Flack P.[20] (2013)** in South Africa conducted a qualitative, exploratory study to assess the views and attitudes towards, and recommendations for Community-based education (CBE) across three South African universities. Short-term benefits included improved service delivery, reduction in hospital referrals, home visits and community orientated primary health care, improved communication with patients and enhanced professionalism of the health care practitioner. Long-term benefits included improved teaching through a relationship with an academic institution and student familiarity with the health care system. Students also became involved in community upliftment projects, thereby acting as agents of change in these communities.
- There are no studies available about "model" for family health educational skills training of students in Family Adoption Program.

MATERIAL AND METHODS

- **Study design**: Randomized controlled trial.

  Study participants were ***randomly selected*** using random number table. They were randomly allocated into two groups, study group with intervention and control group with conventional method. ***Study participants were blinded*** and they were not aware into which group they belong to. The ***person who analyzed was also blinded*** and was not aware to which group the data belonged.

- **Study setting**: Demonstration rooms of the department and Households in the FAP areas allotted by Department of Community Medicine, GSL Medical College, and Rajahmundry.

- **Study population**: Phase I MBBS students of 2022 admission batch

- **Ethical approval**: Obtained from the institutional ethics committee of GSL Medical College, Rajahmundry.

- **Sample size**: Calculated based on "Effect size" for an educational intervention

  The intervention here is "Classroom discussion," and effect size is 0.82 [26]

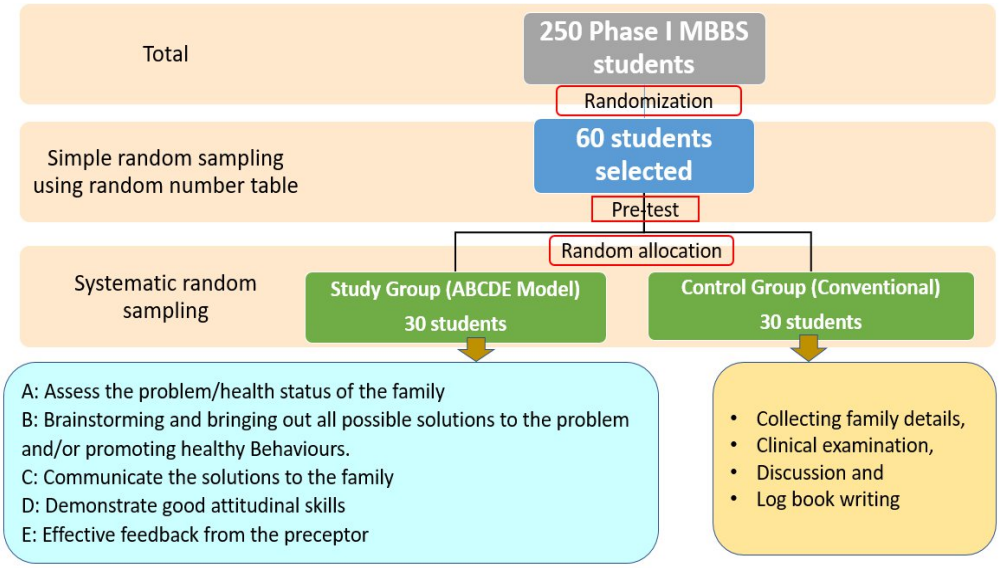
  Sample size is given by the formula,[27]

$$N = 16\frac{1}{effect\ size^2}$$

$$= 16\ [1/(0.82)^2] = 16\ X\ [1/0.6724] = 16\ X\ 1.487 = 23.792$$

N = 30 in each group (Rounded off to 30)

- **Sampling**


Total
250 Phase I MBBS students
Randomization
Simple random sampling using random number table
60 students selected
Pre-test
Random allocation
Systematic random sampling
Study Group (ABCDE Model) 30 students
Control Group (Conventional) 30 students
A: Assess the problem/health status of the family
B: Brainstorming and bringing out all possible solutions to the problem and/or promoting healthy Behaviours.
C: Communicate the solutions to the family
D: Demonstrate good attitudinal skills
E: Effective feedback from the preceptor
Collecting family details,
Clinical examination,
Discussion and
Log book writing

- **Inclusion criteria:**

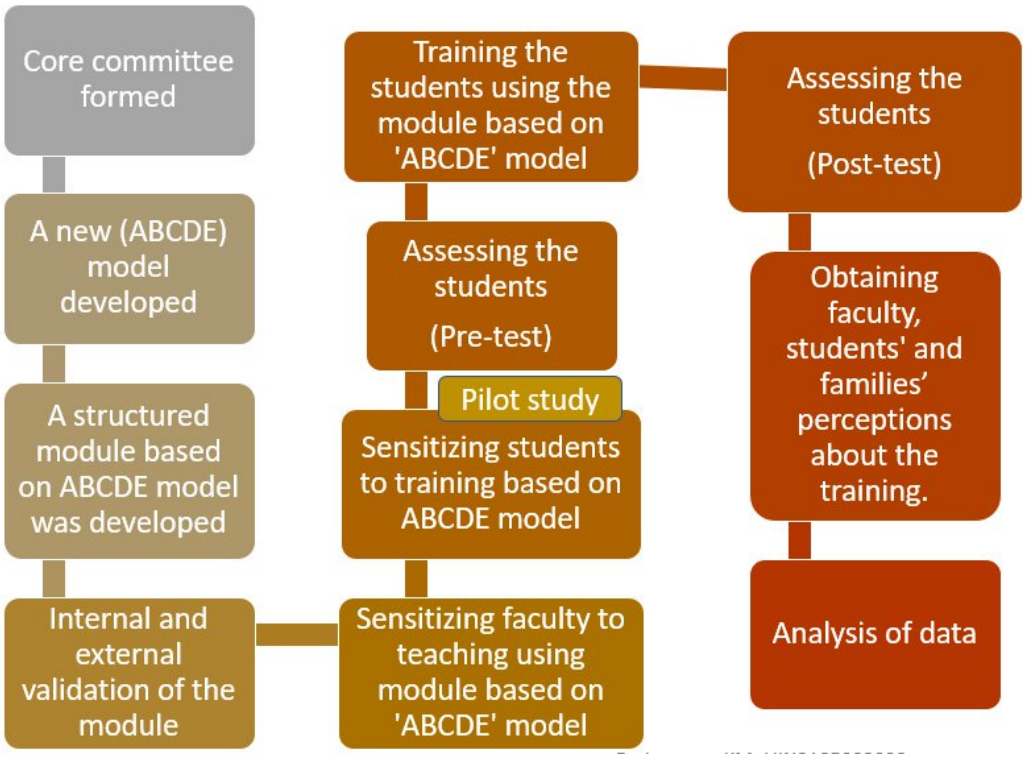
  - ✓ Phase 1 MBBS students of 2022 batch
  - ✓ Students who participated in all the sessions of the training program
  - ✓ Students who consented to participate in the study

- **Exclusion criteria:**

  - ✓ Students who did not participate in the FAP on any 3 consecutive FAP visits
  - ✓ Students who did not take part in any session of the training program

- **Intervention:** 'ABCDE' Model

  - ✓ A: Assess the problem/health status of the family
  - ✓ B: Brainstorming and bringing out all possible solutions to the problem and/or promoting healthy Behaviours.
  - ✓ C: Communicate the solutions to the family
  - ✓ D: Demonstrate good attitudinal skills
  - ✓ E: Effective feedback from the preceptor


Core committee formed
A new (ABCDE) model developed
A structured module based on ABCDE model was developed
Internal and external validation of the module
Sensitizing faculty to teaching using module based on 'ABCDE' model
Sensitizing students to training based on ABCDE model
Pilot study
Assessing the students (Pre-test)
Training the students using the module based on 'ABCDE' model
Assessing the students (Post-test)
Obtaining faculty, students' and families' perceptions about the training.
Analysis of data

- **Study tools:**

  - ✓ ABCDE model of family health educational skills training
  - ✓ Module based on ABCDE model
  - ✓ Assessment tool based on ABCDE model of family health educational skills
  - ✓ Faculty, Students' perceptions questionnaire based on five-point Likert scale and open-ended questions
  - ✓ Families' perceptions interview guide

- **Teaching methods used:**

  Interactive lecture, Role play, Simulation based teaching, SGD (Trust walk, group activities, concept mapping), Video assisted teaching

- **Statistical Analysis:**

  Quantitative data

  - ✓ Validation of the module based on the ABCDE model: Face validation and Content validation was done.
  - ✓ Demographic data: Continuous variables are expressed as mean±SD and categorical data as percentages

- ✓ Perceptions obtained from Likert type scale data: Is expressed in proportions and median scores are calculated for each item. Satisfaction index is calculated for faculty and students
- ✓ Overall rating of the model by the students and faculty using global rating scale of 1 (Low) to 10 (High): Median was calculated to assess the satisfaction of students and faculty for teaching/learning using the model. Mann – Whitney U test was used to assess if there is any significant difference between students' perception and faculty perception about satisfaction with the ABCDE model
- ✓ Retro pre – post self-efficacy scores for assessment of FAP skills: At the end of the intervention, students self – efficacy scores before and after the intervention were compared. They scored the attributes on a Global Rating Scale ranging from 1 to 10. Median values were calculated and Wilcoxon sign test was used to analyse if any significant difference existed between the Pre- and Post- intervention scores assigned by them
- ✓ Reliability of Basic Skills Assessment Tool and Attitudinal Skills Checklist was assessed by calculating the kappa (ƙ) co-efficient for the scores given by two independent assessors.
- ✓ Satisfaction Index: The satisfaction index was calculated for each item to assess how satisfied the students were for each item with the activity

$$\frac{[(n_1 \text{ x } 1) + (n_2 \text{ x } 2) + (n_3 \text{ x } 3) + (n_4 \text{ x } 4) + (n_5 \text{ x } 5)] \text{ x } 20}{[n_1 + n_2 + n_3 + n_4 + n_5]}$$

where, n is the total number of students/faculty gaining the score mentioned in the subscript for that particular item.[29]

Qualitative data:

- ✓ Students' responses to open ended questions: Thematic analysis step by step process including familiarization, coding, categorizing, generating themes, reviewing themes, naming themes and writing up. Inductive approach was used. It allows the data to determine the themes

- **Ethical Clearance:** Ethical approval was obtained from the IEC

- ✓ Ethics approval was obtained from the Ethics Committee of the University vide letter no. GSLMC/RC: 675-EC/675-06/20
- ✓ Revised approvals approving the request for inclusion of the word FAP in the title was received vide letter no. GSLMC/RC:826-EC/826-06/2022

- **Ethical Considerations:**
  - ✓ The study protocol was presented before the ethical committee, and the study was conducted after obtaining the Ethical Clearance from the Ethical Review Board of the Institution.
  - ✓ The study participants were explained about the purpose of the study in an understandable manner. All their doubts were clarified, participation was voluntary and they were free to withdraw from the study anytime if they felt any breach of confidentiality.
  - ✓ They were ensured that the data will be used only for research purpose and kept anonymous to maintain confidentiality.
  - ✓ A written informed consent was obtained from all the participants prior to data collection.
  - ✓ The study was conducted following the ethical principles outlined in the Declaration of Helsinki, which emphasizes the importance of respecting participants' rights, safety, and well-being.

- **Pilot Study:**
  - ✓ Participants: 5 students from 2021 batch, who are also participating in the FAP
  - ✓ Randomly chosen from a batch of 200 students
  - ✓ Finding: In the pilot study, we had one non-local student, who had difficulty in communicating in the local language
  - ✓ Solution: Pairing with a local non-participant student
  - ✓ We applied the same in the main study

- **Timeline/Gantt Chart**

	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22 to Dec 22	Jan 23	Feb 23 to Mar 23	Apr 23 to Jun 23	Jul 23 to Sep 23	Oct 23 to Dec 23	Jan 24 to Mar 24	Apr 24 to Jun 24	Jul 24 to Dec 24	Jan 25 to Feb 25	Mar 25 to Oct 25
Finalising topic																
Review of literature																
Obtained IEC clearance																
Forming core committee																
Developing ABCDE model																
Developing a module																
Developing study tools																
Validating the module																
Validating study tools																
Sensitising faculty																
Sensitising students, Pilot study																
Data collection – Round 1																
Implementing model based module																
Data analysis																
Data collection – Round 2																
Final analysis																
Publication																
Final RAC																
Synopsis, Dissertation, Public Viva voce																

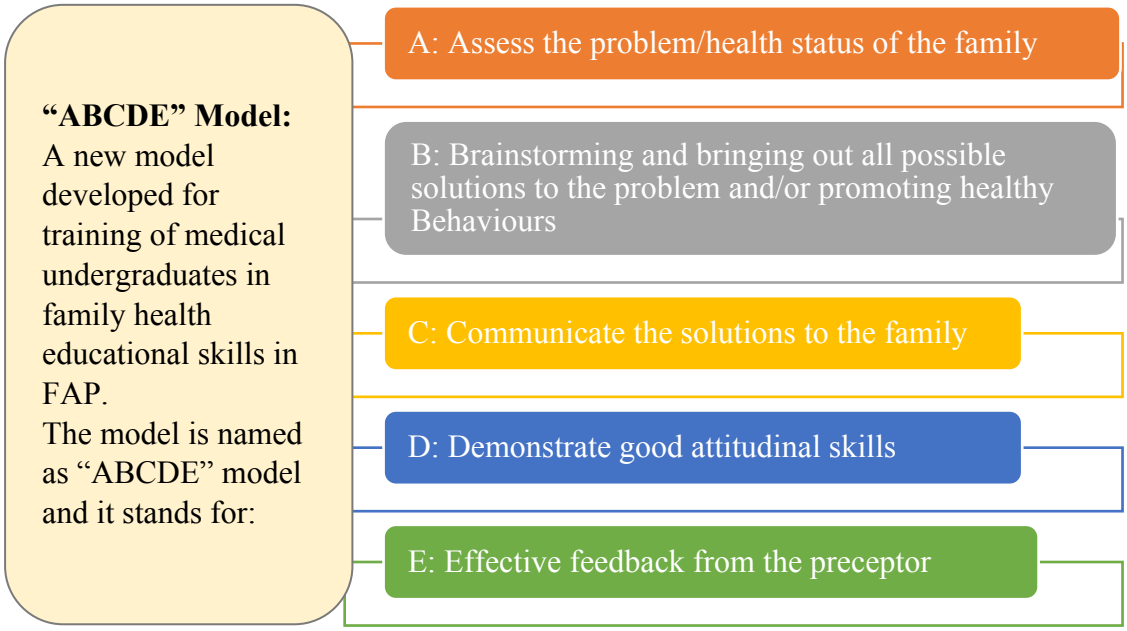
OBSERVATIONS AND DISCUSSION

Demographic data

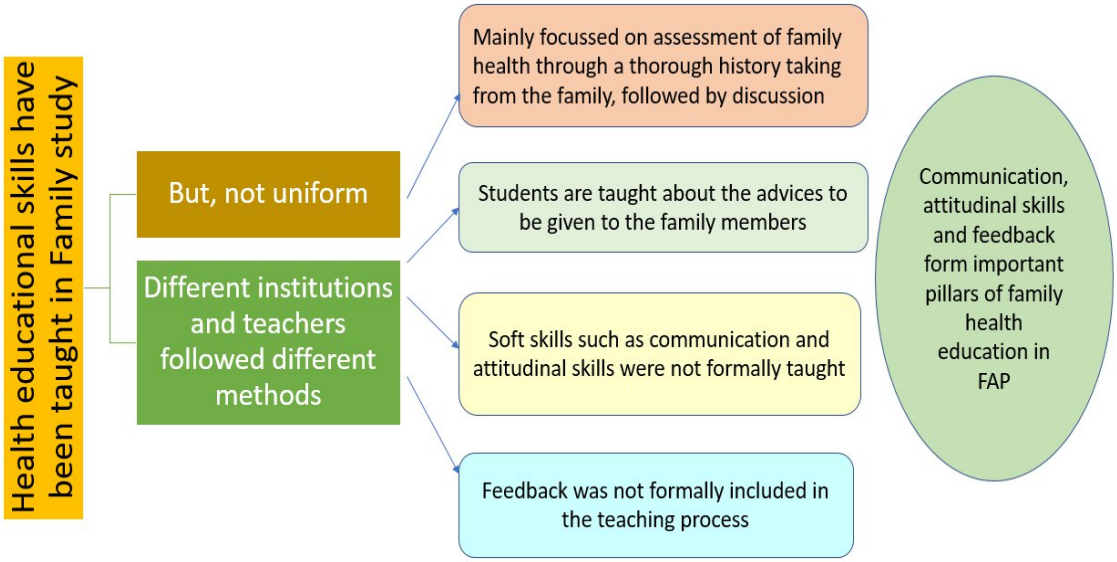
- The mean age was 18.3±0.837 years in the study group and 18.17±0.747 years in the control group with no statistically significant difference (t = 0.651, p 0.517). Hence the two groups are comparable.

- In the study group, males were 12 (40%) and females 18 (60%), while in the control group, males were 11 (36.7%) and females 19 (63.3%) with no statistically significant difference (Z = 0.263, p 0.792). Hence the two groups are comparable.

<u>Objective 1: To develop a new model for training of medical undergraduates in family health educational skills</u>


"ABCDE" Model:
A new model developed for training of medical undergraduates in family health educational skills in FAP.
The model is named as "ABCDE" model and it stands for:
A: Assess the problem/health status of the family
B: Brainstorming and bringing out all possible solutions to the problem and/or promoting healthy Behaviours
C: Communicate the solutions to the family
D: Demonstrate good attitudinal skills
E: Effective feedback from the preceptor

Perceived Need for a New Model


Health educational skills have been taught in Family study
But, not uniform
Different institutions and teachers followed different methods
Mainly focussed on assessment of family health through a thorough history taking from the family, followed by discussion
Students are taught about the advices to be given to the family members
Soft skills such as communication and attitudinal skills were not formally taught
Feedback was not formally included in the teaching process
Communication, attitudinal skills and feedback form important pillars of family health education in FAP

Strengths of the ABCDE model

- ✓ Since 2019, NMC has introduced the CBME curriculum for training of Medical Undergraduates
- ✓ CBME curriculum emphasizes active involvement and engagement of students in learning
- ✓ The TLM used in implementing the model promotes active involvement and engagement
- ✓ Unlike conventional method of training in FAP, model involves AETCOM components which form an integral element in CBME curriculum

<u>Objective 2: To develop a structured validated module of teaching based on the new model of training</u>

- Link to the module based on ABCDE model:

https://drive.google.com/file/d/1hBEmn7-zKpQcPw9bR-BbktWlaUHlHf4r/view?usp=drive_link

Structure of the module

Session	Time	Components	Objectives
1	4 hours (10 AM to 12 PM & 2 PM to 4 PM)	A and B of the model	1. Enumerate the components of ABCDE model 2. Describe the basic concepts about components A and B of the model
2	4 hours (9 AM to 1 PM)	C: Communicate the solutions/ healthy behaviours to the family	1. Explain the process of communication 2. Discuss the importance of communication skills in medical profession 3. Describe different types of communication 4. Demonstrate effective communication with a simulated patient 5. Identify the factors affecting communication, barriers and solutions to effective communication
3	2 hours (2 PM to 4 PM)	D: Demonstrate good attitudinal skills E: Effective feedback from the preceptor	1. Explain what is attitude 2. Discuss the functions and components of attitude 3. Identify the factors influencing attitude 4. Depict the need and importance of attitudinal skills for medical/health professional students 5. Assess attitudinal skills using a checklist 6. Receive feedback and demonstrate its use constructively to improve himself

Implementation of FAP: Was done in 4 steps

Step 1. Introduction/Orientation of students, faculty and families to FAP:

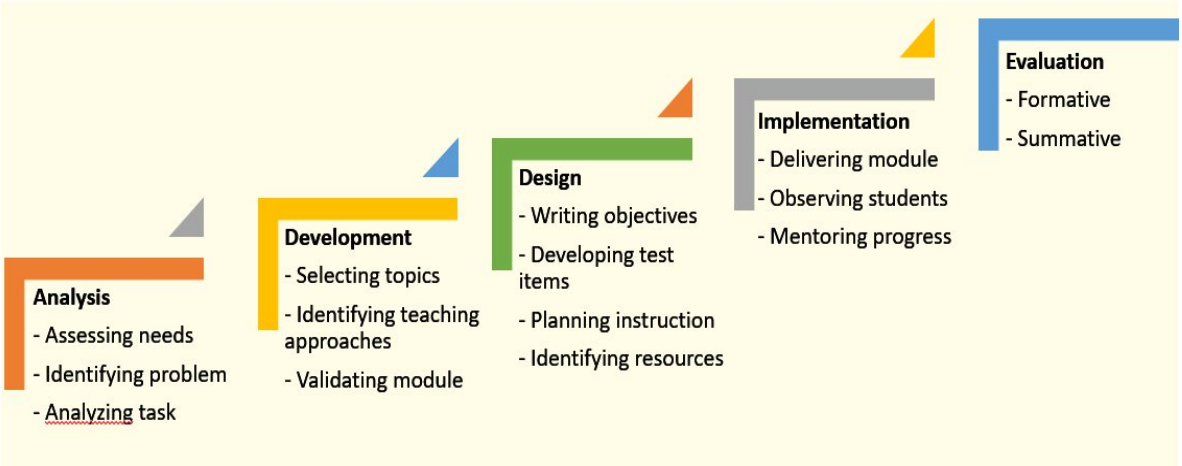
Step 2. Training in simulated scenario:

Step 3. Field activity:

Step 4. Assessment:

Strengths of the module

- The structure of the module has the framework of ADDIE model of module development.
- The term 'ADDIE' is a prevalent reminiscent for the five rudimentary stages in the 'Instructional Design' approach, namely Analysis, Design, Development, Implementation and Evaluation.



- The module is based on the ABCDE model and includes all the components
- It is written in easy and simple language, understandable by faculty and students
- Has been validated by experts and has a good face and content validity
- It is innovative and first of its kind designed for FAP
- It emphasizes on active involvement of students in their learning
- Has elements of cognitive, affective, psychomotor and communication domains

Face validation of the module by internal and external experts (n=10)

The face validity was calculated based on the format and presentation of the module. Validity was 100% for items 2 & 7 while it was 90% for items 1, 3, 4 & 5, 80% for item 6. A cut-off of 70% was pre-decided to establish face validation.

Content validation of the module by internal and external experts (n=10)

- Each item was rated by experts on a scale of 1 to 5, where 1 = not relevant, 2 = relevant but major revision required, 3 = relevant but needs minor revision, 4 = relevant, 5 = highly relevant and appropriate

- The scores of 3, 4 and 5 were deemed acceptable for each item
- The items were accepted based on a prefixed criteria of ≥80% for each item
- If 8 or more than 8 reviewers scored 3 or 4 or 5 for the item, the item was accepted (scored 1) otherwise discarded or modified (scored 0)
- The individual item content validity index (I-CVI) was calculated and was found to be 1 for 14 items and 0.90 for 6 items
- The Cumulative Content Validity Index (C-CVI) was calculated for each Criteria. This was calculated as: 0.96, 0.94, 1 and 0.98 respectively for each criterion (Table 2). The overall module content validity index (CVI) was found to be 0.97

Objective 3: To develop an assessment tool based on new model

- **Basic Skills parameters recorded by the Faculty Observers:** Both the Study group and Control group showed a significant improvement ($p < 0.05$) in the basic skills parameters (Assessing the problem/health status of the family, Identifying the problem/s, Giving appropriate suggestions to the identified problems, Promoting healthy behaviours and Overall score) after the training compared to those before the training.
- **Comparison of Basic Skills Parameters recorded by the Faculty Observers: between Study Group and Control Group after training** showed that there was a significant improvement ($p < 0.05$) in the basic skills parameters in the study group compared to the control group.
- **Assessment of Reliability of Basic Skills Assessment Tool in Study Group**

✓ There is 'Almost perfect' agreement between 2 assessors' scores of students' basic skills ($\kappa = 0.783$, p 0.007). Hence the Basic Skills Assessment Tool is **RELIABLE**

- **Assessment of reliability of attitudinal skills checklist in Study Group**

✓ There is 'Almost Perfect' agreement between 2 assessors' scores of students' attitudes ($\kappa = 0.733$, p 0.000). Hence the attitudinal skills checklist is **RELIABLE**

Objective 4: To assess the effectiveness of the model for training students in family health educational skills

4.1a) Analysis of Retro pre-post scores of students in competencies/skills related to family health educational skills in Family Adoption Program in STUDY AND CONTROL GROUP:

In both the Study group and Control group, there was a significant improvement ($p < 0.05$) in the competencies/skills related to family health educational skills (Clinical assessment skills, Understanding the problems, Conceptual thinking and critical thinking, Identifying possible solutions to the problems, Promoting healthy behaviours, Communicating with the families, Attitude towards family health and providing health education, Skill of receiving feedback and inculcating change, Confidence in completing the family adoption program) in Family Adoption Program after the training compared to those before the training.

4.1b) Comparison of pre-scores of students (Mean ranks) to retro pre-post questionnaire in competencies related to family health educational skills in Family Adoption Program between STUDY GROUP Vs CONTROL GROUP: There was NO significant difference ($p > 0.05$) in the competencies/skills related to family health educational skills in Family Adoption Program BEFORE the training.

4.1c) Comparison of post-scores of students (Mean ranks) to retro pre-post questionnaire in competencies related to family health educational skills in Family Adoption Program between STUDY GROUP Vs CONTROL GROUP: There was a significant improvement ($p < 0.05$) in the competencies/skills related to family health educational skills in Family Adoption Program AFTER the training, in the Study group.

4.2a) Comparison of Faculty Assessment of Pre-test Communication Skills of students between Study Group and Control Group showed that there was no significant difference ($p >0.05$) between groups.

4.2b) Comparison of Faculty Assessment of Post-test Communication Skills of students between Study Group and Control Group showed that there was a significant improvement ($p <0.05$) in the Post-test Communication Skills of students in the study group compared to the control group.

4.3) Comparison of Faculty Assessment of Attitudinal Skills of students (n=30 in Study Group and n=30 in Control Group) before and after training by Attitudinal Skills Checklist (Each item scored 0 for not done and 1 for done; total score = 0 to 10)

Comparison of Faculty Assessment of Attitudinal Skills of students between Study and Control groups showed that, there was a significant improvement in post-test scores of study group compared to control group (p 0.000), while there was no significant difference in pre-test scores between study group and control group (p 0.109)

4.4) Comparison of overall rating for satisfaction with the ABCDE model by students and faculty on Global Rating Scale:

- Analysis of Global Rating Scale scores for satisfaction, (how satisfied are you with the ABCDE method for learning/teaching skills in FAP) showed that the Median was 9 for both students and faculty, which indicates **HIGH** satisfaction
- Comparison of overall rating using Mann Whitney "U" test revealed that there is no significant difference in the overall rating for satisfaction with the ABCDE model between the faculty and students (Mean rank: Faculty = 31.10 and Students = 24.10, p 0.146).

Objective 5: To assess the acceptability and feasibility of the model among medical students and faculty

Training students in skills for FAP, based on a structured module based on ABCDE model is feasible, acceptable and should be practiced routinely. The satisfaction index was 88.67 for students and 92 for faculty.

Objective 6: To obtain faculty, students' and families' perceptions about the model

6a. Perceptions of Study Group students, faculty and families about the FAP skills training module based on ABCDE model (n=30)

- Perceptions of majority of the students and faculty were positive about the FAP skills training module based on ABCDE model
- Analysis of perceptions of families and patients to retro pre-post questionnaire about the performance of students in study group and control group showed no significant difference in any of the items except two before training. After

training, there was a significant improvement in all the elements in the study group compared to control group.

- Thematic analysis of students' responses to open ended question on what did they like about ABCDE model of training, revealed themes like, Interactive and active engagement, Novelty, Practical, Attitudinal skills, Bonding and teamwork, Communication skills, Feedback, Teaching/Learning methods, Finding solutions to problems, Concept Map
- Thematic analysis of students' responses to open ended question on two or more learning points/aspects from the entire experience of FAP, generated themes like Attitudinal skills, Critical thinking, Teamwork, Developing relationships, Communication skills, Feedback, Finding solutions to problems, Adaptation to various situations
- Thematic Analysis of students' responses to suggestions for improvement in teaching/learning by ABCDE model" generated themes of start after training, increase the time and increase activities.

Thus it is concluded that the ABCDE model is very effective for family health educational skills training in Family Adoption Program

DISCUSSION

- According to **Vanikar AV, Kumar V[25] (2019)** the FAP is expected to hone communication skills which are the back-bone of the profession; make students learn to be humane and empathize with the rural population by understanding their customs, limitations and positive aspects
- The aim of imparting education to the students is to make them team leaders for health care, primary consultants and learn the basic skills like arriving at a diagnosis of problem, administering intravenous fluids/ medicines, drawing blood, dressing of wounds, etc. [25]
- The ABCDE model has the elements of assessing the health status, identifying the problem, basic clinical and practical skills, communication, attitudinal skills and feedback for improvement.
- The government of India (GOI) had already launched a national Community Health worker (CHW) scheme and Village Health Guide (VHG) program in 1977.[26] However, this program failed to achieve the expected impact.
- Steinert Y, Mann K, Anderson B et al.[27] (2016) report that, the effectiveness of a teaching program is contributed to key features like evidence-informed educational design (use of multiple instructional methods), relevant content, experimental learning and opportunities for practice and application, opportunities for feedback and reflection, educational projects, intentional community building, longitudinal program design, and institutional support. This module fulfils all these features.
- According to Yusoff MS,[28] a content validity index of 0.97 is deemed highly relevant and commendable
- Sidhu TK, Mahajan R, Kaur D, Bhandari B,[29] developed a module to inculcate research skills in medical undergraduates. The module had high face validity (>90%) and content validity (CVI=0.975)
- Aggarwal et al.[30] conducted a study evaluating the impact of communication skills (CS) training on first year MBBS students at a Government Medical

College. Participants positively received the participant centric, assessment-based teaching and learning module, finding it engaging and insightful.

SUMMARY AND CONCLUSIONS

- It is concluded that the ABCDE model is very effective for family health educational skills training in Family Adoption Program.
- This study resulted in development of a new (ABCDE) model for training medical undergraduates in family health educational skills, development and validation of a new module, tool for assessment of the basic skills, attitudinal skills and assessment of perceptions of students, faculty and families. Training students using a structured model will inculcate clinical and preventive skills, communication and attitudinal skills, health educational skills among students from the time they start their medical profession. This will create a strong foundation for family health education, leading to health promotion and better health of the community as a whole. This helps in attainment of goals and objectives of FAP introduced by the NMC.

RECOMMENDATIONS

- The model may be incorporated for teaching family health educational skills in FAP routinely for every batch of students.
- The model may be used to train students in large numbers and assessed for effectiveness
- It can be disseminated to students from other institutes and geographical areas to provide additional evidence about its effectiveness
- The model and the module can be incorporated in the UG curriculum developed by the university and NMC for training students in FAP

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